

NOVEMBER/DECEMBER 2025

**23UFCS14/23UFSC14 — PROBLEM
SOLVING TECHNIQUE**

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.



What is machine language?

Give one example each of input and output devices.

3. What is meant by structured programming?
4. Draw the symbol of a decision in a flowchart.
5. Write the syntax of a simple if statement.
6. Define repetition structure.
7. What is meant by array initialization?
8. What is meant by string termination character?
9. List any two symbols used in a DFD.
10. State one benefit of recursion over iterations.

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Explain in detail the working principles of translators.

Or

- (b) Differentiate between primary memory and secondary storage devices.

12. (a) Explain different data types with examples.

Or

- (b) Explain different types of programming errors with examples.

13. (a) Explain multi-way selection structures with an example.

Or

- (b) Write the role of loop control variable in repetition structures.

14. (a) Explain numeric and character-based data with examples.

Or

- (b) Write pseudocode to store and print 5 student marks using a ID array.

15. (a) Write pseudocode for a recursive function to calculate factorial of a number.

Or

- (b) Explain the basic concepts of files with suitable examples.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the different types of computers.
17. What is flow-chart? Explain the advantages and disadvantages of flowcharts with an example.
18. Write an algorithm, pseudocode, and flowchart to calculate the sum of digits of a number using loops.
19. Discuss 1Dim and 2Dim arrays with syntax and examples.
20. Explain in detail Data Flow Diagrams with suitable examples.

